

Understanding older adults' intention to share health information on social media: the role of health belief and information processing

Health
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Abstract

Purpose – Social media greatly enhances public access to health information and thus attracts older adults who tend to attach more importance to their health. This study aims to identify the factors that contribute to the likelihood of older adults' health information sharing on social media.

Design/methodology/approach – By drawing on health belief (HBM) and elaboration likelihood models (ELM), a novel conceptual model integrating older adults' health belief and information processing is established to uncover the factors. Online survey data from 290 Chinese older adult users of WeChat, the most popular social media platform in China, were collected to test the research model.

Findings – As health belief-related variables, perceived susceptibility is positively associated with health information-sharing intention (HISI), while perceived severity negatively influences HISI, which is contrary to prior findings. For information processing, the positive impacts of argument quality and source credibility on HISI are fully mediated by perceived usefulness.

Originality/value – This study is one of the first studies to explore the initiative use of information and communication technology among older adults. The new theoretical perspective proposed herein considers health belief and information processing perspectives in a complementary manner and can facilitate an overall analysis of the factors influencing older adults' HISI in a social media context. This study also furthers understandings of the ELM and expands the theory of HBM to take the age of decision makers into account.

Keywords Health information sharing, Older adults, Social media, Health belief, Information processing

Paper type Research paper

1. Introduction

The world is confronted with aging of population, and virtually every country is experiencing growth in the number and proportion of older adults (United Nations, 2019). Generally, older adults have more health concerns and issues than younger people, and therefore constitute a large and growing population among both online health information seekers and potential

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information sharers (Sheng and Simpson, 2013). With features such as a large user base, easy access and high levels of interactivity, social media is gradually becoming one of the major sources of health information and has significantly changed how health information is generated, disseminated and received in the network environment. Evidence suggests that an increasing number of older adults serve as the core audience of health information on social media, acting like gatekeepers for health information in the online context (Coelho and Duarte, 2016). Meanwhile, social media also allows older adults to share the health information with others, alleviating the self-loss caused by withdrawal from their social roles and satisfying their sense of meaningfulness (Baltes *et al.*, 2005; Sinclair and Grieve, 2017). Thus, older adults can potentially form a bridge between health education and their acquaintances.

Having recognized the critical role of social media, many health care practitioners, such as traditional health organizations, health care professionals and even lay persons, have registered on social media and pushed health information on a regular or irregular basis. Subscribers can conveniently receive, read and share information on various health-related topics. If health care information can be widely shared by older adults (the key audience), then both health care practitioners and the general public (who may receive this information) will benefit tremendously. For health care practitioners, successful dissemination of health information can increase their visibility and impact (Shi *et al.*, 2018) and can allow them to promote fee-based health services and quickly reach current or potential consumers at a low cost (Baird and Parasnis, 2011). Moreover, for those possible recipients, access of health information is proven to improve their health literacy and facilitate their health promotion (Park *et al.*, 2013). However, the mass production of social media content has also created an overwhelming amount of health information (Yan *et al.*, 2017) and only limited health information is favored and shared by older adults. Therefore, it is meaningful to scientifically understand the factors influencing older adults' health information-sharing intention (HISI) on social media.

However, previous studies provided inadequate insights into HISI among older adults via social media and were also limited in terms of the following three aspects. First, prior studies on older adults' engagement with information and communication technology (ICT) tended to focus on antecedents influencing their technology adoption (e.g. Macedo, 2017), the intergenerational digital divide (e.g. Magsamen-Conrad *et al.*, 2015), health information seeking (e.g. Medlock *et al.*, 2015; Sheng and Simpson, 2013) and mandatory provision of health information (Kim and Choi, 2019). The focus was limited as older adults were regarded as a passive, lagged group for ICT exposure. In fact, due to age-related changes, older adults are eager to select fewer but more valuable emerging technologies to compensate for their loss of abilities and to achieve goals, especially pertaining to health (Baltes *et al.*, 2005; Mitzner *et al.*, 2010). Although the literature points out the promise of ICT initiative's use, e.g. sharing health information on social media with the benefit of assisting older adults to build interpersonal connections (Chen *et al.*, 2014), there is still little detailed investigation (Coelho and Duarte, 2016). Thus, older adults' sharing behavior, characterized as online information behavior with an initiative nature, should not be ignored and relevant insights are required.

Second, previous studies on online information sharing considered both general information, such as user-posted short messages (e.g. Ha and Ahn, 2011; Shi *et al.*, 2018), and specific types of information, such as brand posts, political news and disaster events (e.g. Kim, 2014; Khobzi *et al.*, 2019; Stieglitz and Dang-Xuan, 2013). However, issues related to sharing of health information on social media were rarely examined. Health information has a unique scientific and instructive nature and potentially assists recipients in responding to potential health risks; thus, it is distinct from general and other specific types of information. Therefore, the factors prompting older adults to share health information differ from those pertaining to other information to some extent and further exploration is required.

Third, studies on health information sharing mainly targeted the general population and were restricted to sharing based on personal health data (Esmaeilzadeh, 2020), personal health knowledge and experiences (e.g. Li *et al.*, 2018; Zhang *et al.*, 2017). These types of information are collectively called specific health information, also known as private health information, which usually concern people's health privacy (Yan *et al.*, 2016). Thus, the abovementioned studies emphasized the role of trust and perceived transparency of the privacy policy in promoting as well as privacy risk and perceived cost in impeding individuals' sharing intention. However, sharing of online public health information, such as that pushed via social media, has rarely been examined directly. Unlike personal-specific information, health content from public resources exists as original data with the purpose of human participation, rather than merely residing in an individual's mind based on a set of belief (Terra and Angeloni, 2003). Accordingly, the decision-making process for sharing such type of health information is complex, involving a combined action of users' belief about the issues described in health information and judgment of the format of health information (Larcker and Lessig, 1980; Mou *et al.*, 2016; Sussman and Siegal, 2003). Hence, much uncertainty persists regarding the sharing mechanism for such type of health information, and further observation is merited.

The present study attempts to establish a theoretical model that integrates health belief and information processing to examine the aforementioned issues, by considering the health and information processing perspectives. It draws on the health belief model (HBM) (Rosenstock, 1974) to explore the influence of older adults' health belief on their HISI on social media. The relation between information processing and HISI is interpreted based on the elaboration likelihood model (ELM) (Petty and Cacioppo, 1986). These two theories are combined in a complementary manner to explore the factors that influence older adults' HISI on social media. This study contributes to the literature on ICT initiative's use and health information sharing among older adults. The key predictors identified herein will enable health care practitioners of social media to develop effective health-related content and formulate appropriate communication strategies, facilitating the dissemination of health information.

The remainder of this paper is structured as follows. Sections 2 and 3 provide the theoretical background and present the research model and hypotheses, respectively. Section 4 describes the methodology and Section 5 presents the results and analysis. A discussion of the main findings is given in Section 6. Finally, Section 7 concludes the paper, summarizing the theoretical and practical implications, as well as the limitations.

2. Theoretical background

2.1 Social media, health information and older adults

By reviewing literature concerning social media use among the older segment of population, Coelho and Duarte (2016) identified the following consensuses: most older adult users adopt social media to maintain social contact and access health information and other information related to daily activities, active information sharing on social media with family members and friends has cognitive and social benefits for older adults and older adults believe that they play a part in mass communication of health to family members or other acquaintances. These findings indicate that a better understanding needs to be captured regarding how the design of social media effectively supports information sharing, especially health information sharing among older adults.

Health information, created by a health care provider or lay person in any form or medium, corresponds to persuasive exposition toward health issues about such as physical, mental and behavioral health (Liu *et al.*, 2020). It is regarded as a continuum between health education and health improvement. Generally, older adults are exposed to health information

for prolonged periods. [John and Cole \(1986\)](#) evidenced older adults' slower information processing and declined deliberative abilities compared to the young. Older and young adults also exhibit differences in attention to disparate health information segments ([Bol et al., 2016](#)). Furthermore, older people develop preferences for emotionally positive information in memory because of its soothing effect ([Carstensen et al., 2006](#); [Shamaskin et al., 2010](#)). These research findings indicated age-related differences in information processing speed and health information preferences but did not profoundly explain older adults' health information-related decision-making. It remains unclear whether existing theoretical models regarding health information sharing for the general population are applicable to older adults. Here, we address this research gap by investigating the antecedents of older adults' HISI on social media.

2.2 Theories regarding health information sharing

The decision-making process for health information involves a combined action of users' belief regarding the described issues and judgment of the format of health information ([Larcker and Lessig, 1980](#); [Mou et al., 2016](#); [Sussman and Siegal, 2003](#)). The sharing mechanism for health information therefore should be treated as a unique case because, besides the consideration of typical information sharing, the decision-making process of online behavior for health-related purposes is also involved. Given this, we consider the knowledge of both information sharing and health-related behavior. For the former, the theory of information sharing in a technical context and the ELM elucidates individuals' processing of persuasive information. For the latter, the HBM is the theory that can inform a thorough understanding about one's belief in protecting people's health from illness.

2.2.1 Information sharing. The theory of information sharing in a technical context was first studied by [Constant et al. \(1994\)](#), and it asserts that people are more likely to share information when they have the tendency of prosocial transformation. In other words, information sharing depends on possession of attitude that the nature of sharing is socially good (i.e. there are good outcomes for the sharer or for other members of the organization). [Kolekofski and Heminger \(2003\)](#) extended this theory and further addressed the instrumentality of sharing. The instrumentality spans the amount and size of information, its value and the beneficiaries of sharing, all of which may influence the sharing likelihood. [Jarvenpaa and Staples \(2000\)](#) verified this theory and found that sharing electronic media is strongly associated with the belief that computer-based information systems (ISs) provide valuable information in an efficacious way.

Based on the abovementioned arguments, information that is likely to provide useful solutions is usually of high priority in the decision-making process. In other words, the information with highly perceived usefulness is more likely to be shared. Following this inference and extending the line of inquiry, the current study aims to examine how perceived usefulness influences HISI among older adults.

2.2.2 The elaboration likelihood model. Another theoretical perspective that provides insights into individuals' information sharing behavior is the ELM, which interprets how information processing influences one's information decision-making process ([Petty and Cacioppo, 1986](#)). Based on the extent to which individuals engage with information, the ELM outlines two influencing routes: central and peripheral ([Petty and Cacioppo, 1986](#)). The first is on the basis of an effortful and thoughtful assessment of the central merits of the argument advocated in information, while the second is characterized by its focus on peripheral cues, rather than on the content itself and requires less cognitive efforts of audiences to assess information. The central route occurs when recipients carefully review the idea advocated in the information, indicating a high level of elaboration likelihood. The peripheral route manifests when recipients adopt uncomplicated inferences (e.g. environmental factors,

surface clues or affective states) to evaluate the information, rather than analyzing the content itself; hence, there is a low elaboration likelihood level. The central and peripheral routes are considered extremes of a single fundamental elaboration; however, information processing may involve a mixture of these routes in practice (Petty and Cacioppo, 1986). Attitude or perception changes occurring via the central route tend to be more stable and persistent than those via the peripheral route (Bhattacharjee *et al.*, 2006; Ho and Bodoff, 2014).

In the IS literature, the ELM has been introduced to illustrate the information-related decision-making process, concerning email messages adoption (Sussman and Siegal, 2003), electronic health records adoption by individuals (Angst and Agarwal, 2009), news retweeting on Twitter (Ha and Ahn, 2011; Shi *et al.*, 2018), personal information privacy concerns (Zhou, 2017), online review evaluations (Davis and Agrawal, 2018) and task-information fitting (Zha *et al.*, 2018). Studies in this genre consistently indicate that information processing along both central and peripheral routes jointly influences decision-making. Researchers have identified argument quality as the typical central route as it reflects the persuasive strength of an argument; they argued that source credibility is the representative peripheral cue (e.g. Bhattacharjee *et al.*, 2006; Ha and Ahn, 2011; Sussman and Siegal, 2003). The extent to which information processing influences the information-related decision-making process may depend to what extent it contributes to perceived usefulness of information (Bhattacharjee *et al.*, 2006; Sussman and Siegal, 2003).

Given the considerable empirical evidence for the explanatory power of the ELM, we advocate its use to investigate health information sharing. The ELM as a persuasive theory is applicable to the present study for two reasons. First, information-sharing decision-making commonly involves health information processing to check the eligibility of information format. Second, judgments on health information could be on the basis of thoughtful processing, such as health issue-related arguments, or probably based on less effortful processing of heuristic cues, such as the trustworthy image presented by the information provider.

The elaboration system may decline with age, with slower information processing speed and reduced short-term memory, etc. (Peters *et al.*, 2007). For decision-making, older adults tend to prefer and remember peripheral cues because they are unwilling or unable to devote the requisite cognitive energy to elaboration (Mikels *et al.*, 2010). Moreover, older adults sometimes selectively utilize their deliberative abilities according to the properties of the decision problem (Peters *et al.*, 2007). For example, influence discrepancies often arise among older adults in less meaningful situations. Nevertheless, the signs of aging-induced deliberative ability decline are lessened when older adults perceive the decision problem as meaningful. Thus, we argue that older adults do not show special deliberation differences with respect to the influence of information processing as health information sharing may compensate for the self-loss caused by withdrawal from their social roles, satisfying their meaningfulness need (Baltes *et al.*, 2005). Given this, we integrate insights of the ELM to further examine the potential influence of information processing along the two routes on HISI.

2.2.3 The health belief model. Among various health behavior-related theories, the HBM provides insights into how to educate individuals on performing actions to respond to health risks (Rosenstock, 1974). The HBM extends the use of psychosocial variables to the interpretation of preventive behaviors and analyzes why people are willing to act to prevent diseases or control health conditions. This model asserts that individuals refer to two main components when determining whether to implement health-related behaviors: perceptions about risks and outcome expectancies toward the behavior (Maiman and Becker, 1974). Risk perception pertains to the perceived severity of the negative consequences of existing risks along with the perceived susceptibility to the risk; the former is the belief regarding the seriousness of the condition-induced consequences, and the latter is the personal belief about

the likelihood of contracting the condition. The outcome expectancies are the perceived net outcomes, computed by assessing the perceived benefits of the health-related behavior implemented to avert the risk relative to the perceived barriers to that behavior.

In its early stages, the HBM focused on individual health prevention behaviors, explaining how people act to avoid illness or injury (Rosenstock, 1974), comply with medication and attend clinic visits (Janz and Becker, 1984). IS researchers recently applied this model to expound the increased likelihood of individuals performing computer safety measures (e.g. Ng *et al.*, 2009), communicating about health issues via the Internet (Ahadzadeh *et al.*, 2015) and seeking online health information (Mou *et al.*, 2016). In summary, HBM use has evolved from adoption of disease prevention measures in traditional situations to prediction of general online health behaviors, providing a generic framework to explain preventive behaviors. The HBM has considerable explanatory power but not every construct in this model is used to predict preventive behavior implementation. Ahadzadeh *et al.* (2015) employed the HBM to examine Internet use for health reasons, by omitting constructs in the outcome expectancy component (i.e. perceived benefits and perceived barriers). They identified constructs in health risk perceptions as antecedents of the perceived usefulness of health-related Internet use, which in turn influences health-related Internet use to reduce underlying health risks.

Herein, the fundamental goal of health information sharing is taken to be factual assistance and provision of suggestions to avert health risks and is based on the understanding that individuals perform sharing actions if they feel that others' potential health problems can be avoided. There are resemblances in belief about protecting one's health and about protecting health status of others from potential risks. Given this and inspired by Ahadzadeh *et al.* (2015), perceptions of risks in HBM theory are appropriate to explain one's judgment on the usefulness of health information and their health information-sharing behavior. Considering the high availability of health information (the prerequisite for sharing) and the operability of sharing for vast majority of older adult social media users (Guo, 2017; Tencent and CASS, 2018), the perceived barriers constructed in the HBM are not considered by this study. The perceived benefits construct is also omitted because, to some extent, it can constitute a subordinate concept of perceived usefulness (Terra and Angeloni, 2003).

Overall, the studies mentioned above facilitate understandings of health-related decisions among the general population; however, further investigation is required to determine whether similar logic can be directly applied to older adults. Therefore, we examine HISI among older adults in the social media context by employing this theoretical lens.

3. The research model and hypotheses

The research model is presented in Figure 1 and is based on the ELM, the HBM and the information sharing literature. We aim to examine the effect of older adults' belief regarding health risks (i.e. perceived severity and perceived susceptibility) on perceived usefulness and their HISIs. We also posit that older adults' health information processing in central (i.e. argument quality) and peripheral (i.e. source credibility) routes contributes to perceived usefulness, which further exerts influence on HISI. Control variables including age, gender and educational background are included in our model as the literature in the field of IS and medical informatics indicates that these variables could influence people's sharing intention (Esmailzadeh, 2020; Kim and Choi, 2019; Zhang *et al.*, 2013).

3.1 Perceived usefulness and health information-sharing intention

The information sharing literature suggests that information that likely offers valuable instructions and inspiration is prioritized highly during judgment and decision-making processes (e.g. Constant *et al.*, 1994). Consistent with this notion, Sussman and Siegal (2003)

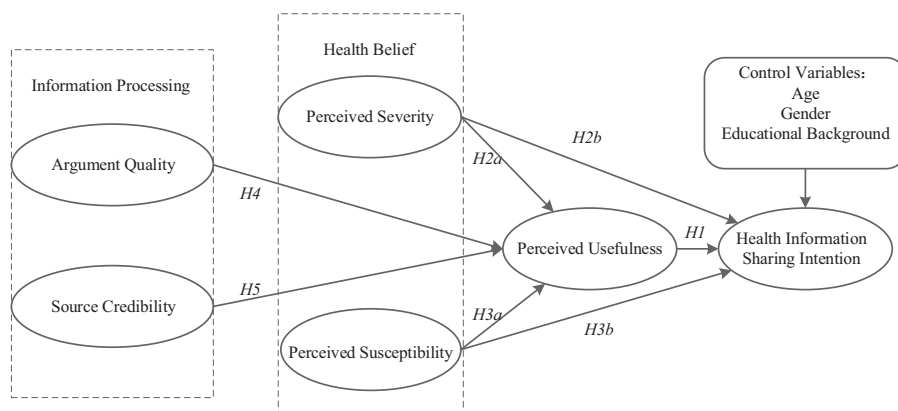


Figure 1.
The research model

found that information considered to have high perceived usefulness is associated with a higher adoption level. [Ha and Ahn \(2011\)](#) found that the perceived usefulness of tweets is positively related to the recipient's intention to share those tweets, which confirms the role of perceived usefulness in information sharing in a social media context.

To summarize the abovementioned arguments, individuals' perceived information usefulness promotes information-sharing intention as the potentially beneficial outcomes of useful solutions may increase the likelihood of information sharing. For older adults, in particular, useful information may positively influence their social ties and is therefore more likely to be shared. Accordingly, as regards health information sharing on social media, older adults are more likely to share health information when they perceive the received information as useful, i.e. conducive to health risk reduction and to improve the health statuses of social media friends. Thus, we propose the following hypothesis:

H1. Perceived usefulness has a positive impact on older adults' HISI on social media.

3.2 Health belief perspective

To formulate the health belief concept, we consider the description of health risk belief in the HBM, i.e. that this belief predicts the likelihood of engaging in a behavior for health-related purposes ([Rosenstock, 1974](#)). Further, the health risk belief reveals concerns over a specific health issue, including its perceived severity and perceived susceptibility ([Maiman and Becker, 1974](#)). Specifically, once an individual is conscious of the health risks posed by a given health issue, he/she forms a belief concerning the seriousness of the risks and the probability of experiencing them. Both perceived severity and perceived susceptibility provide incentives for individuals to positively assess the usefulness of the health-related behavior and act accordingly. As noted by [Ahadzadeh et al. \(2015\)](#), individuals' belief in health risks have also been identified as antecedents of perceived usefulness of health-related Internet use, which in turn influences health-related Internet use. [Mou et al. \(2016\)](#) argued that perceived susceptibility and perceived severity are positively correlated with user acceptance of Internet-based health information services.

Following [Ng et al. \(2009\)](#) and [Rosenstock \(1974\)](#), perceived severity here refers to personal feelings about the seriousness of social media friends developing given health-related issues described in health information. In the current situation, when exposed to health information on a certain issue, older adults are concerned with the severity of health issues, e.g. whether it is fatal, disabling or reduces physical or mental functioning and believe that it may be

avoided if proper measures are taken. Health information pertaining to an issue with serious consequences is more likely to arouse older adults' protection motivation; thus, it is considered more valuable for preventing adverse consequences. Moreover, older adults are also more inclined to share information pertaining to serious consequences, given that acquisition and subsequent use of that information can help social media friends avoid or reduce such risks. Thus, we propose the following hypotheses:

H2a. Perceived severity has a positive impact on perceived usefulness.

H2b. Perceived severity has a positive impact on older adults' HISI on social media.

Similar to [Ng et al. \(2009\)](#) and [Rosenstock \(1974\)](#), perceived susceptibility here refers to personal belief in the likelihood of social media friends contracting the health issues described in health information. In the context of social media, older adults tend to assess the relevance of received health information, such as whether their friends in social media will experience or are in danger of developing the specific health issue. Health information with higher relevance is recognized as more beneficial items for improving health conditions and is more likely to be shared. Thus, we propose the following hypotheses:

H3a. Perceived susceptibility has a positive impact on perceived usefulness.

H3b. Perceived susceptibility has a positive impact on older adults' HISI on social media.

3.3 The information processing perspective

The unique nature of health information from public resources determines that information processing matters to the decision-making process of the information behavior. Inspired by the research study underlining perceived information usefulness as a mediator of information processing and the intention toward performing an advocated information behavior ([Ha and Ahn, 2011](#); [Sussman and Siegal, 2003](#)), we introduce the ELM to analyze the influence of information processing on assessment of health information usefulness. [Sussman and Siegal \(2003\)](#) asserted perceived usefulness of received email messages is positively affected by the argument quality, following the central route, as well as the source credibility, as a peripheral clue. A follow-up study by [Bhattacharjee et al. \(2006\)](#) found that argument quality and source credibility directly influence users' usefulness perception toward IT acceptance. [Ha and Ahn \(2011\)](#) further revealed that argument quality and source credibility of the received tweets are associated with individuals' perception of the tweets' usefulness. Herein, we adopt their insertion of perceived usefulness as an intervening variable that shapes the sharing intention. Meanwhile, social media is not only convenient for obtaining health information but it also facilitates the spread of unconfirmed information or even rumors because of the diversity of information sources and lack of quality assurance. Thus, to ensure the value of certain information, individuals examine the information format (e.g. by identifying the argument quality and checking the source credibility) to determine its usability.

Following [Sussman and Siegal \(2003\)](#), argument quality here is a construct defined as individuals' perceived completeness, accuracy and definiteness of health information obtained from social media. Argument quality of information on the central route under a high level of elaboration likelihood needs to be inspected when older adults assess the merits of the information itself. Health information with superior argument quality is determined to be of high utility because of its focused vision and strict logic. There is a strong basis to suggest that, if older adults perceive higher argument quality for information, they are likely to perceive that information as being more useful. Thus, we propose the following hypothesis:

H4. Argument quality has a positive impact on perceived usefulness.

As in [Sussman and Siegal \(2003\)](#), source credibility here refers to older adults' perception of the credibility of sources of received health information. Currently, health information on social media is published by individuals or organizations with multiple sources having various expertise levels. During peripheral clue processing, the source credibility of information should be checked, e.g. the credibility of the producers or operators of registered accounts, respectively. Health information is thought to have favorable outcomes when attributed to a high- rather than a low-credibility source. Based on the abovementioned analysis, we propose the following hypothesis:

H5. Source credibility has a positive impact on perceived usefulness.

4. The methodology

4.1 Measures

All construct items in this study were adapted from existing studies. Each item was measured according to a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items of HISI were adapted from studies by [Ha and Ahn \(2011\)](#) and [Zhang et al. \(2017\)](#). Measurements of the constructs of perceived severity and perceived susceptibility were adapted from studies by [Ng et al. \(2009\)](#) and [Rosenstock \(1974\)](#). The items of argument quality were derived from studies by [Jarvenpaa and Staples \(2000\)](#) and [Sussman and Siegal \(2003\)](#). The items of source credibility and perceived usefulness were modified from studies by [Sussman and Siegal \(2003\)](#) and [Ha and Ahn \(2011\)](#).

There were two stages of questionnaire formation. Initially, four experts in IS and medical informatics were invited to review the adapted scales. The original scales in English were then translated into Chinese for ease of understanding for the respondents as the survey was conducted in China. A back-translation method suitable for cross-cultural research was adopted to ensure translation validity ([Brislin, 1970](#)). We invited 30 older adults with rich using experience of social media to participate in the pilot survey adopting the initial questionnaire. Based on their feedback, we revised the questionnaire, corrected the ambiguous expressions and simplified the overly complex sentences to obtain the final version. The construct items and references are detailed in the [Appendix](#).

4.2 Data collection and the sample

To examine the research model, we conducted an online survey focused on older adult users of WeChat, the most popular social media platform in China. We selected WeChat for the following considerations. First, there are a growing number of older adult users of WeChat. WeChat was first released by Tencent in 2011 and has since gained popularity among older adults, who were previously stereotyped as lacking interest in emerging technologies ([Tencent and CASS, 2018](#)). WeChat is the primary online access portal for older adults in China ([Guo, 2017](#)), with more than 50 m monthly active elderly users in 2018 ([Tencent and CASS, 2018](#)). Second, WeChat facilitates a wealth of health information. Many individuals and organizations have registered WeChat accounts to promote health information. Subscribers can share the received health information with specific WeChat friends, groups and/or to WeChat moments by simply clicking the "share" button.

Although the definition of "older adults" varies in the literature, people over 50 years of age were selected as potential respondents in the current study for the following reasons. First, this population segment is usually considered in studies related to social media use and health information-sharing behavior among older adults (e.g. [Guo, 2017](#); [Sheng and Simpson, 2013](#); [Silver, 2015](#)). Second, chronic disease prevalence increases from age 50; thus, this age group is associated with a greater potential need and concern for health information. Moreover, social media use among individuals over 50 years of age has almost doubled recently ([Silver, 2015](#)).

INTR

The online survey was conducted between May and June 2018 over 35 days. Considering the low accessibility and poor serviceability levels of the target population sampling frame (Coto *et al.*, 2017), we adopted the snowball sampling approach (Goodman, 1961) for data collection, aligned with previous IS studies (e.g. Campbell *et al.*, 2013; Zhang *et al.*, 2018). In this approach, prospective respondents are contacted and participants are encouraged to share the survey link with potential respondents to increase responses which facilitate the population heterogeneity. We recruited a group of students from different regions of China at a large-scale comprehensive university, whose parents were over 50 years of age with experience using WeChat. The students were invited to send the link containing the questionnaire to their parents via WeChat for them to respond. Their parents were then encouraged to similarly share the questionnaire with their peers. Respondents were well informed of the anonymity and confidentiality of all private data before questionnaire completion. After successful submission, respondents received small rewards. Finally, 349 responses were received, of which 290 were valid and used for further analysis after exclusion of age unmatched or short-lived responses.

The respondent profiles are detailed in Table 1. The sample representativeness was also considered. We found that the demographic characteristics of the older adult users in this study were similar to statistics on WeChat use among older adults (Tencent and CASS, 2018) and consistent with the gender and age distribution of older adult Internet users (CNNIC, 2020; Guo, 2017). Thus, the sample is typical to a certain extent.

Measure	Items	Frequency	Percentage (%)
Gender	Male	121	41.7
	Female	169	58.3
Age	51–55	114	39.3
	56–60	70	24.1
	61–65	66	22.8
	66–70	21	7.2
	>70	19	6.6
			73
Education	Junior high school or below	73	25.2
	Senior high school/ technical secondary school	103	35.5
	Three years of college	77	26.6
	Four years of university	31	10.7
Employment status	Postgraduate	6	2.0
	Without occupation	41	14.1
	Active occupation	83	28.6
Frequency of using WeChat	Retired	166	57.3
	At least once per day	243	83.8
	At least once per week	39	13.4
	At least once per month	8	2.8
Topics of health information concerned about (multiple choices)	Nutrition	225	77.6
	Fitness	201	69.3
	Illness	174	60.0
	Healthy lifestyle	142	49.0
	Mental health	106	36.6
	Emotion regulation	87	30.0
	No concern	8	2.8
	Other types	8	2.8

Table 1.
Profiles of respondents ($N = 290$)

5. Results and the analysis

The analysis of the proposed model consisted of the assessment of common method bias in data, the evaluation of global model fit, the evaluation of the measurement model and the validation of the structural model. In the present research study, partial least squares (PLS) was adopted to test the proposed model. The PLS algorithm is suitable for the validation of exploratory studies and relatively complicated models (Chin *et al.*, 2003). SmartPLS 3.0 was employed to test both the measurement and structural models. The statistical significance levels of the structural model path coefficients were verified by the bootstrapping technique.

5.1 Common method bias

As all data were self-reported and collected from a single channel, we used methods to suppress common method bias (Lindell and Whitney, 2001) before data collection. We designed the questionnaire to be as simple and clear as possible. Items requiring less cognitive processing were placed at the end to avoid stiff responses due to fatigue. We also conducted a pilot survey to ensure that the respondents' key belief was evaluated to minimize the likelihood of false attitudes affected by certain situations.

Common method bias was assessed in two separate tests. First, Harman's single-factor test (Podsakoff and Organ, 1986) was used to estimate this bias. The test result indicates that the first factor indicated a variance of 34.30% (less than 40%), and a single dominant factor could not be generated; thus, common method bias in our data was acceptable (Podsakoff and Organ, 1986). The PLS marker variable approach was also adopted to diagnose common method bias (Rönkkö and Ylitalo, 2011). We selected e-health literacy as a marker variable, data for which were collected in the present survey and proved to be approximately uncorrelated with the dependent variable of this study (Chen and Lee, 2014). The correlation coefficients between the marker variable and all variables in the model are positive, and the average correlation coefficient is less than 0.2, indicating that the marker variable selection is reasonable (Rönkkö and Ylitalo, 2011). We then added the marker variable to the model as an endogenous variable for the analysis and comparison with the original baseline model. Results indicated that addition of the marker variable to the proposed model did not change the significance of all path coefficients; thus, our data exhibited no severe common method bias (Rönkkö and Ylitalo, 2011). The abovementioned test results indicate that common method bias is not an issue in our study.

5.2 Evaluation of global model fit

Global model fit evaluation should be performed at the starting of model assessment, to compare the empirical correlation matrix with the model-implied correlation matrix of the estimated model (Henseler *et al.*, 2016). This can be assessed by dint of inference statistics (i.e. model fit testing) or via the employ of fit indices (i.e. assessment of the approximate model fit). In this study, the standardized root mean square residual (SRMR) (Hu and Bentler, 1999) was chosen as the approximate model fit criterion, and the geodesic discrepancy (d_G) and the unweighted least squares discrepancy (d_{ULS}) (Dijkstra and Henseler, 2015) were applied to quantify the discrepancy between two matrices. As illustrated by Table 2, the value of SRMR is 0.053, less than the suggested cut-off value of 0.08, and all discrepancies are below the 95% quantile of the bootstrap discrepancies (Henseler *et al.*, 2016). All the results indicate an acceptable level of explanatory power and the overall model fit is satisfactory.

5.3 The measurement model

The reliability, convergent and discriminant validity were adopted to evaluate the measurement model (Straub *et al.*, 2004). The reliability and convergence validity results are detailed in Table 3, where all indicator loadings are within the acceptable range.

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Cronbach's alpha and composite reliability values both exceeded the recommended level of 0.7, indicating good reliability (Nunnally, 1978). The average variance extracted (AVE) values of all constructs exceed the threshold of 0.5, suggesting qualified convergence validity and proving that items can effectively show the corresponding constructs (Fornell and Larcker, 1981). The abovementioned results verify the construct reliability and convergence validity. The discriminant validity, which is a measure of whether two constructs can be effectively distinguished, was checked by examining both Fornell–Larcker criterion (Fornell and Larcker, 1981) and the recently proposed heterotrait–monotrait ratio (HTMT) (Henseler *et al.*, 2015). The square root of AVE is higher than the correlation of interconstructs in Table 4 and the reported values of HTMT ratio of discrimination correlation in Table 5 are below the threshold of 0.85, confirming the qualified discriminant validity (Fornell and Larcker, 1981; Henseler *et al.*, 2015).

5.4 The structural model

The test of the structural model included the examination of path coefficients and the corresponding significance levels. Figure 2 presents the results of PLS analysis. The coefficients of determination R^2 , denoting the amount of variance explained by the independent variables, are 55.8% and 46.4% for perceived usefulness and HISI, respectively.

The hypothesis testing results are listed in Table 6. According to the results, the positive effects of perceived usefulness and perceived susceptibility on HISI are significant,

Table 2.
Evaluation of global
model fit

Fit criterion	Value	HI ₉₅	Goodness of fit
SRMR	0.053	0.113	Satisfactory
d_{ULS}	0.530	2.414	Satisfactory
d_G	0.367	0.446	Satisfactory

Note(s): HI₉₅ = 95% of bootstrap quantile

Table 3.
Reliability and
convergence validity

Construct	Item	Indicator loading	Composite reliability	AVE	Cronbach's alpha
Argument quality	AQ1	0.866	0.896	0.742	0.826
	AQ2	0.877			
	AQ3	0.841			
Health information- sharing intention	HISI1	0.871	0.928	0.764	0.897
	HISI2	0.862			
	HISI3	0.879			
	HISI4	0.865			
Perceived severity	PSE1	0.875	0.920	0.794	0.870
	PSE2	0.894			
	PSE3	0.903			
Perceived usefulness	PU1	0.912	0.926	0.806	0.880
	PU2	0.896			
	PU3	0.886			
Perceived susceptibility	PSU1	0.881	0.915	0.783	0.861
	PSU2	0.885			
	PSU3	0.888			
Source credibility	SC1	0.866	0.920	0.793	0.870
	SC2	0.894			
	SC3	0.912			

supporting H1 and H3b. The negative effect of perceived severity on HISI is significant, while the relationship is contrary to expectation. Hence, H2b is not supported. Moreover, supporting H3a, perceived susceptibility significantly influences perceived usefulness. However, the impact of perceived severity on perceived usefulness is not significant; thus, H2a is not supported. As for information processing, argument quality and source credibility

	AQ	HISI	PSE	PU	PSU	SC
AQ	<i>0.861</i>					
HISI	0.494	<i>0.874</i>				
PSE	0.409	0.263	<i>0.891</i>			
PU	0.472	0.351	0.406	<i>0.898</i>		
PSU	0.385	0.404	0.335	0.460	<i>0.885</i>	
SC	0.420	0.498	0.437	0.282	0.332	<i>0.891</i>

Table 4.

Note(s): Italicized numbers indicate the square root of AVE. AQ: argument quality; HISI: health information-sharing intention; PSE: perceived severity; PU: perceived usefulness; PSU: perceived susceptibility; SC: source credibility

Discriminant validity (Fornell–Larcker criterion)

	AQ	HISI	PSE	PU	PSU	SC
AQ						
HISI	0.505					
PSE	0.422	0.207				
PU	0.487	0.445	0.464			
PSU	0.392	0.471	0.432	0.542		
SC	0.549	0.515	0.402	0.381	0.415	

Table 5.

Note(s): AQ: argument quality; HISI: health information-sharing intention; PSE: perceived severity; PU: perceived usefulness; PSU: perceived susceptibility; SC: source credibility

Discriminant validity (heterotrait–monotrait ratio)

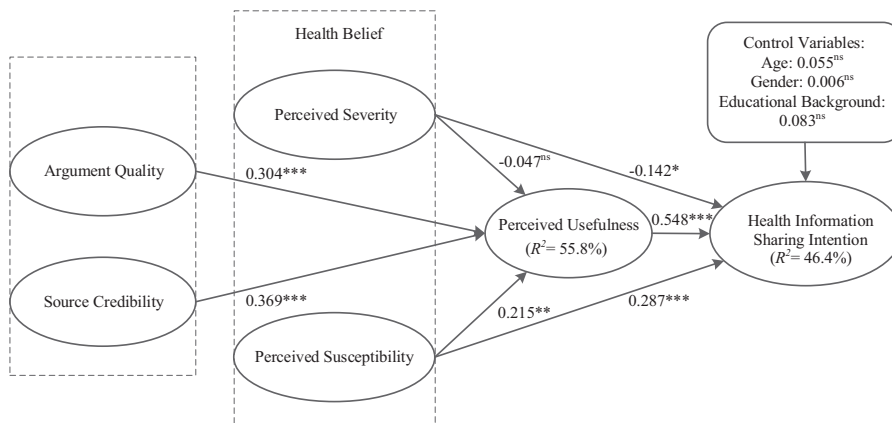


Figure 2.

Results of the partial least squares analysis

Note(s): ns = non-significant, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

both significantly influence perceived usefulness, indicating H4 and H5 are both supported. Results indicate that the influences of the selected control variables on HISI are not statistically significant.

We also adopted the bootstrapping technique (MacKinnon *et al.*, 2002) to examine the mediation role of perceived usefulness, although relevant hypotheses were not explicitly proposed. In comparison to the traditional methods such as the Sobel method and the method proposed by Baron and Kenny, the bootstrapping method can directly test the indirect influence of the independent variable on the dependent variable, without the need for the mediation effect to follow normal distribution (MacKinnon *et al.*, 2002; Wu *et al.*, 2018). In this study, 5,000 bootstrap resamples were used to obtain the 95% confidence interval of indirect effect. Table 7 presents the results of the mediation effects. From the results obtained, the indirect effects of argument quality and source credibility on HISI are significant, while the direct effects are not significant. This indicates that perceived usefulness plays a full-mediation role between argument quality and HISI. Besides, the effect of source credibility on HISI is also fully mediated by perceived usefulness.

6. Discussion

By drawing on the HBM and the ELM, this study develops and empirically tests the predictors of older adults' HISI on social media. Several key findings are derived, as detailed below.

First, this study reveals that older adults' belief in health risks directly influences their intention to share health information on social media. Contrary to expectation, the findings indicate that perceived severity negatively influences older adults' HISI. This discrepancy may be explained by the existence of positivity effect in decision-making among the older adults. Actually, aging is accompanied by a positivity effect manifested in that older adults usually

Table 6.
Results of hypothesis testing

Hypothesis	Paths	Path coefficients	<i>t</i> -value	<i>p</i> -value	Hypothesis validation
H1	PU->HISI	0.548	8.623	0	Supported
H2a	PSE->PU	-0.047	0.795	0.427	Not supported
H2b	PSE->HISI	-0.142	2.510	0.012	Not supported
H3a	PSU->PU	0.215	2.735	0.006	Supported
H3b	PSU->HISI	0.287	3.732	0	Supported
H4	AQ->PU	0.304	3.928	0	Supported
H5	SC->PU	0.369	4.421	0	Supported

Note(s): AQ: argument quality; HISI: health information-sharing intention; PSE: perceived severity; PU: perceived usefulness; PSU: perceived susceptibility; SC: source credibility

Table 7.
Analysis of mediating effects

IV	MV	DV	Indirect effect			Direct effect			Mediation proportion
			Lower bound (2.5%)	Upper bound (97.5%)	Zero included?	Lower bound (2.5%)	Upper bound (97.5%)	Zero included?	
AQ	PU	HISI	0.072	0.234	No	-0.120	0.189	Yes	Full mediation
SC	PU	HISI	0.088	0.295	No	-0.103	0.225	Yes	Full mediation

Note(s): AQ: argument quality; HISI: health information-sharing intention; PU: perceived usefulness; SC: source credibility; IV: independent variable; MV: mediating variable; DV: dependent variable

heighten the processing of positive information because they tend to dissolve negative experiences, given the limited future time (Reed and Carstensen, 2012). Older adults appear to prioritize materials that offer hope over consequence severe stimuli across a diverse range of health information. Thus, they may typically share health information that conveys active trends instead of creating social panic. In addition, our findings indicate a significant positive relationship between perceived susceptibility and HISI of older adults, implying that older adults are more likely to share the health information if its topic is closer to the actual health statuses of their social media friends. The finding further confirms the role of perceived susceptibility in encouraging online information behavior for health-related purposes (Mou *et al.*, 2016).

Second, the relationship between older adults' belief in health risks and perceived information usefulness are examined in this study. As regards the insignificant correlation between perceived severity and perceived usefulness, our results indicate that belief in the severity of a given health issue is not associated with older adults' perception of the value of the corresponding health information. As mentioned above, perceived severity has been found to explain the usefulness of health-related Internet use (Ahadzadeh *et al.*, 2015), while it is not a predictor of perceived usefulness of health information in the current context. The association between advanced age and avoidant strategy preferences may help explain this finding. When the consequences of the health issues described in the information are too severe for social media friends, older adults may respond defensively by ignoring the value of the information itself. This defensive response assists older adults in maintaining tolerable arousal levels, given their decreased energy reserves in later life (Reed and Carstensen, 2012). Hence, perceived severity loses its positive significance in older adults' value judgment of health information. Moreover, the results also provide evidence that higher perceived susceptibility is associated with higher perceived usefulness, highlighting that older adults rate information relevant to the health statuses of social media friends as beneficial to improving their friends' health.

Finally, this study determines that the positive effects of argument quality and source credibility on HISI are fully mediated by perceived usefulness. This reinforces previous findings that suggest that, on a high elaboration likelihood level, older adults deem health information more valuable if they perceive it to be more accurate and logical than information with ambiguous meaning (Ha and Ahn, 2011; Sussman and Siegal, 2003). Furthermore, the peripheral clue, such as source credibility as a supplementary element, proves to be a positive factor that influences older adults' judgment to perceived usefulness. This finding confirms that a higher value is likely to be attached to health information from trusted sources, outlining older adults' information processing mechanism using peripheral clues. Additionally, argument quality and source credibility are found to contribute to perceived usefulness rather than directly influencing older adults' HISI. These results imply that perceived usefulness positively mediates the relationship between the two variables of information processing and HISI. Specifically, in the social media environment, optimization of health information format may not directly stimulate audiences' behavioral changes but convincing them about what the information suggests is valuable. It uncovers that perceived usefulness as a mediator is adequate to explain the process from information processing to the formation of intention to share health information.

7. Implications and limitations

7.1 Theoretical implications

The theoretical implications are as follows. First, this paper fills in a gap in the existing literature on ICT initiative's use among older adults, by elucidating their HISI on social media. This responds to a call by Coelho and Duarte (2016) for detailed, theoretical insights into ICT initiative's use among older adults. Distinct from previous studies that commonly

stereotyped older adults as a technologically passive and lagged group (e.g. [Macedo, 2017](#); [Magsamen-Conrad et al., 2015](#)), this research examines the information-sharing behavior of older adults on social media, which is characterized as an information behavior with an initiative nature ([Chen et al., 2014](#)). We address this knowledge gap by demonstrating that older adults would perform a series of reasoned assessments toward potential health risks and the format of health information before making sharing decisions in a technical context. This study shows potential to advance future research on ICT initiative's use among older adults by providing insights into health information sharing.

Second, this study is unique in identifying the antecedents of older adults' intention to share health information from public sources, enriching the literature of health information sharing targeted older adults. The sharing intention antecedents differ among health information from public sources, as studied herein, and health information based on personal health data, knowledge and experiences of the general population, which have been frequently studied (e.g. [Esmaeilzadeh, 2020](#); [Li et al., 2018](#); [Zhang et al., 2017](#)). This paper innovatively introduces the concept of health belief and information processing in a complementary way to form an integrated model to explore the research question. This new theoretical perspective can facilitate an overall analysis of factors influencing older adults' HISI in a social media context.

Third, our research enriches understandings of the ELM by suggesting that the aging process accompanied by cognitive resource decline should not change the maintenance of basic mechanism associated with health information processing. By drawing on the ELM, our work demonstrates that the positive effects of argument quality and source credibility on HISI are fully mediated by perceived usefulness. Consistent with findings derived from previous studies targeted for the general population ([Bhattacharjee et al., 2006](#); [Sussman and Siegal, 2003](#)), our research suggests that the influence processes on central and peripheral routes are not mutually exclusive for older adults, and they may also employ both levels of elaboration likelihood simultaneously to form perceptions related to usefulness of health information. We provide evidence that older adults' declined elaboration systems do not alter their information processing method or the consequent effects on information judgments and sharing decisions, although this decline reduces information processing efficiency and creates a preference for peripheral cues.

Finally, the HBM is first applied and tested in a social media-based health information sharing setting among older adults. The uniqueness of health information to help recipients respond to potential health risks distinguishes it from general and other specific types of information (e.g. [Kim, 2014](#); [Stieglitz and Dang-Xuan, 2013](#)). Besides the typical information-sharing considerations, the online behavior of decision-making process for health-related purposes is also involved. Thus, a more pertinent understanding of health information sharing from the health perspective is obtained by this study. Specifically, perceived susceptibility is an influential factor in predicting perceived usefulness as well as HISI. However, a negative effect of perceived severity on HISI is identified, contrary to prior research. Moreover, the relation between perceived severity and perceived usefulness is not confirmed. This study presents new evidence on the differences exhibited by older adults as regards the role of belief of health-risk severity in health-related decisions and prior findings applicable to the general population could not be directly applied to health information sharing among the older adults. An understanding of these differences can help expand to HBM theory to take the age of decision makers into account.

7.2 Practical implications

Health care practitioners on social media, e.g. content producers and operators of registered accounts, are committed to providing health information with the goal that it could be widely

spread through social media. Improved understanding of how formulation of health information can effectively support sharing is required, especially for the critical audience of older adults. This study has several implications for health care practitioners on social media. First, the findings may aid content producers in improving their design of health information to achieve an enhanced sense of identity. We find that health information sharing on social media is a participatory activity that requires older adults to review the arguments and information sources. Considering the role that argument quality plays in determining perceived information usefulness, producers of health information should ensure the integrity and supporting evidence of health information as these are the basic parameters of an argument (Yi *et al.*, 2013). Additionally, encouraging health content producers to obtain professional qualifications and cultivate their own levels of expertise will help them earn trust from older adults and thereby boost older adults' perceived value of health information. In particular, clear presentation regarding the certified expertise levels of information producers or acceding to a centralized reputation system will promote rapid determination for the source credibility (Huang *et al.*, 2019).

Second, our findings are expected to provide inspiration for operators of health-related registered accounts on social media to formulate appropriate strategies to facilitate the spread of information. Given that our finding supports the negative impact of perceived severity on HISI, we suggest the cautious use of the information dissemination strategy through depicting consequence severity. Considering the requirements for maintaining reasonable emotional arousal among older adults (Reed and Carstensen, 2012), practitioners can offer hopeful clues with regard to issues with severe consequences via the incorporation of constructive suggestions. Moreover, a high perceived likelihood for social media friends to contract the health issues will boost older adults' intention to share. Thus, selection and promotion of health content close to the users' own health conditions could be well considered; however, substantial understanding of users' health statuses and preferences is a prerequisite here.

7.3 Limitations

This study has the following limitations. First, the research sample and data sources are limited. Our sample is restricted to older adults in China rather than global older adult users of social media. For future studies, a wider sample could be selected for cross-cultural research and to explore the influence of cultural characteristics on HISI among older adults. The proposed model is validated based on data from older adult users of WeChat. Although WeChat is an extensively used social media platform, the generalization of our findings needs to be further verified on different social media platforms. Second, health information framing is not included in the research model as a peripheral cue of information processing. Future research may provide more insightful guidance by investigating how health information framing, such as positively versus negatively framed (Khobzi *et al.*, 2019) and gain versus loss framing (Wilson *et al.*, 1998), influences older adults' intention to share. Third, given the consensus regarding older adults' high concern for health information, this study is limited to the investigation of health information sharing activity among older adults. Future research may consider dividing the population into two age-based groups, to compare the differences in sharing between younger and older adults and to determine the exact causes of inconsistencies between the findings of this study and those of previous studies. Fourth, although measures were adopted to minimize latent sample selection bias, the adoption of snowball sampling remains an underlying limitation of this study. This type of respondent-driven sampling may not be truly random (Heckathorn, 2002) and standard probability sampling methods could be employed in future work, where conditions permit. Finally, empirical evidence was collected through self-reporting and the actual measurement levels

could not be fully determined, which may have generated biases. In future research, such assessments can be considered in combination with more objective measurements to confirm the validity of the present findings.

References

- Ahadzadeh, A.S., Sharif, S.P., Ong, F.S. and Khong, K.W. (2015), "Integrating health belief model and technology acceptance model: an investigation of health-related internet use", *Journal of Medical Internet Research*, Vol. 17 No. 2, p. e45, doi: [10.2196/jmir.3564](https://doi.org/10.2196/jmir.3564).
- Angst, C.M. and Agarwal, R. (2009), "Adoption of electronic health records in the presence of privacy concerns: the elaboration likelihood model and individual persuasion", *MIS Quarterly*, Vol. 33 No. 2, pp. 339-370, doi: [10.2307/20650295](https://doi.org/10.2307/20650295).
- Baird, C.H. and Parasnis, G. (2011), "From social media to social customer relationship management", *Strategy and Leadership*, Vol. 39 No. 5, pp. 30-37, doi: [10.1108/10878571111161507](https://doi.org/10.1108/10878571111161507).
- Baltes, P.B., Freund, A.M. and Li, S.C. (2005), "The psychological science of human ageing", in Johnson, M.J., Bengtson, V.L. and Coleman, P. (Eds), *The Cambridge Handbook of Age and Ageing*, Cambridge University Press, Cambridge, pp. 47-71, doi: [10.1017/CBO9780511610714.006](https://doi.org/10.1017/CBO9780511610714.006).
- Bhattacharjee, A. and Sanford, C. (2006), "Influence processes for information technology acceptance: an elaboration likelihood model", *MIS Quarterly*, Vol. 30 No. 4, pp. 805-825, doi: [10.2307/25148755](https://doi.org/10.2307/25148755).
- Bol, N., van Weert, J.C.M., Loos, E.F., Romano Bergstrom, J.C., Bolle, S. and Smets, E.M.A. (2016), "How are online health messages processed? Using eye tracking to predict recall of information in younger and older adults", *Journal of Health Communication*, Vol. 21 No. 4, pp. 387-396, doi: [10.1080/10810730.2015.1080327](https://doi.org/10.1080/10810730.2015.1080327).
- Brislin, R.W. (1970), "Back-translation for cross-cultural research", *Journal of Cross-Cultural Psychology*, Vol. 1 No. 3, pp. 185-216, doi: [10.1177/135910457000100301](https://doi.org/10.1177/135910457000100301).
- Campbell, D.E., Wells, J.D. and Valacich, J.S. (2013), "Breaking the ice in B2C relationships: understanding pre-adoption e-commerce attraction", *Information Systems Research*, Vol. 24 No. 2, pp. 219-238, doi: [10.1287/isre.1120.0429](https://doi.org/10.1287/isre.1120.0429).
- Carstensen, L.L. (2006), "The influence of a sense of time on human development", *Science*, Vol. 312 No. 5782, pp. 1913-1915, doi: [10.1126/science.1127488](https://doi.org/10.1126/science.1127488).
- Chen, W. and Lee, K.H. (2014), "More than search? Informational and participatory eHealth behaviors", *Computers in Human Behavior*, Vol. 30, pp. 103-109, doi: [10.1016/j.chb.2013.07.028](https://doi.org/10.1016/j.chb.2013.07.028).
- Chen, A., Lu, Y., Chau, P.Y.K. and Gupta, S. (2014), "Classifying, measuring, and predicting users' overall active behavior on social networking sites", *Journal of Management Information Systems*, Vol. 31 No. 3, pp. 213-253, doi: [10.1080/07421222.2014.995557](https://doi.org/10.1080/07421222.2014.995557).
- Chin, W.W., Marcolin, B.L. and Newsted, P.R. (2003), "A partial least squares latent variable modeling approach for measuring interaction effects: results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study", *Information Systems Research*, Vol. 14 No. 2, pp. 189-217, doi: [10.1287/isre.14.2.189.16018](https://doi.org/10.1287/isre.14.2.189.16018).
- CNNIC (2020), "The 45th China statistical report on Internet development", available at: <http://www.cnnic.net.cn/hlwfzyj/hlwzxbg/hlwjtjbg/202004/P020200428596599037028.pdf> (accessed 28 April 2020).
- Coelho, J. and Duarte, C. (2016), "A literature survey on older adults' use of social network services and social applications", *Computers in Human Behavior*, Vol. 58, pp. 187-205, doi: [10.1016/j.chb.2015.12.053](https://doi.org/10.1016/j.chb.2015.12.053).
- Constant, D., Kiesler, S. and Sproull, L. (1994), "What's mine is ours, or is it? A study of attitudes about information sharing", *Information Systems Research*, Vol. 5 No. 4, pp. 400-421, doi: [10.1287/isre.5.4.400](https://doi.org/10.1287/isre.5.4.400).

- Coto, M., Lizano, F., Mora, S. and Fuentes, J. (2017), "Social media and elderly people: research trends", in Meiselwitz, G. (Ed.), *SCSM 2017: Social Computing and Social Media*, Springer, Cham, Vancouver, pp. 65-81, doi: [10.1007/978-3-319-58562-8_6](https://doi.org/10.1007/978-3-319-58562-8_6).
- Davis, J.M. and Agrawal, D. (2018), "Understanding the role of interpersonal identification in online review evaluation: an information processing perspective", *International Journal of Information Management*, Vol. 38 No. 1, pp. 140-149, doi: [10.1016/j.ijinfomgt.2017.08.001](https://doi.org/10.1016/j.ijinfomgt.2017.08.001).
- Dijkstra, T.K. and Henseler, J. (2015), "Consistent and asymptotically normal PLS estimators for linear structural equations", *Computational Statistics and Data Analysis*, Vol. 81, pp. 10-23, doi: [10.1016/j.csda.2014.07.008](https://doi.org/10.1016/j.csda.2014.07.008).
- Esmailzadeh, P. (2020), "The impacts of the privacy policy on individual trust in health information exchanges (HIEs)", *Internet Research*, Vol. 30 No. 3, pp. 811-843, doi: [10.1108/INTR-01-2019-0003](https://doi.org/10.1108/INTR-01-2019-0003).
- Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50, doi: [10.2307/3151312](https://doi.org/10.2307/3151312).
- Goodman, L.A. (1961), "Snowball sampling", *The Annals of Mathematical Statistics*, Vol. 32 No. 1, pp. 148-170, doi: [10.1214/aoms/1177705148](https://doi.org/10.1214/aoms/1177705148).
- Guo, L. (2017), "WeChat as a semipublic alternative sphere: exploring the use of WeChat among Chinese older adults", *International Journal of Communication*, Vol. 11, pp. 408-428, available at: <https://ijoc.org/index.php/ijoc/article/view/5537>.
- Ha, S. and Ahn, J.H. (2011), "Why are you sharing others' tweets?: the impact of argument quality and source credibility on information sharing behavior", *Proceedings of Thirty Second International Conference on Information Systems*, pp. 1-11, available at: <https://aisel.aisnet.org/icsis2011/proceedings/humanbehavior/4/>.
- Heckathorn, D.D. (2002), "Respondent-driven sampling II: deriving valid population estimates from chain-referral samples of hidden populations", *Social Problems*, Vol. 49 No. 1, pp. 11-34, doi: [10.1525/sp.2002.49.1.11](https://doi.org/10.1525/sp.2002.49.1.11).
- Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modeling", *Journal of the Academy of Marketing Science*, Vol. 43, pp. 115-135, doi: [10.1007/s11747-014-0403-8](https://doi.org/10.1007/s11747-014-0403-8).
- Henseler, J., Hubona, G. and Ray, P.A. (2016), "Using PLS path modeling in new technology research: updated guidelines", *Industrial Management and Data Systems*, Vol. 116 No. 1, pp. 2-20, doi: [10.1108/IMDS-09-2015-0382](https://doi.org/10.1108/IMDS-09-2015-0382).
- Ho, S.Y. and Bodoff, D. (2014), "The effects of web personalization on user attitude and behavior: an integration of the elaboration likelihood model and consumer search theory", *MIS Quarterly*, Vol. 38 No. 2, pp. 497-520, doi: [10.25300/MISQ/2014/38.2.08](https://doi.org/10.25300/MISQ/2014/38.2.08).
- Hu, L.T. and Bentler, P.M. (1999), "Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives", *Structural Equation Modeling*, Vol. 6 No. 1, pp. 1-55, doi: [10.1080/10705519909540118](https://doi.org/10.1080/10705519909540118).
- Huang, K.Y., Chengalur-Smith, I.S. and Pinsonneault, A. (2019), "Sharing is caring: social support provision and companionship activities in healthcare virtual support communities", *MIS Quarterly*, Vol. 43 No. 2, pp. 395-423, doi: [10.25300/MISQ/2019/13225](https://doi.org/10.25300/MISQ/2019/13225).
- Janz, N.K. and Becker, M.H. (1984), "The health belief model: a decade later", *Health Education Quarterly*, Vol. 11 No. 1, pp. 1-47, doi: [10.1177/109019818401100101](https://doi.org/10.1177/109019818401100101).
- Jarvenpaa, S.L. and Staples, D.S. (2000), "The use of collaborative electronic media for information sharing: an exploratory study of determinants", *The Journal of Strategic Information Systems*, Vol. 9 Nos 2-3, pp. 129-154, doi: [10.1016/S0963-8687\(00\)00042-1](https://doi.org/10.1016/S0963-8687(00)00042-1).
- John, D.R. and Cole, C.A. (1986), "Age differences in information processing: understanding deficits in young and elderly consumers", *Journal of Consumer Research*, Vol. 13 No. 3, pp. 297-315, doi: [10.1086/209070](https://doi.org/10.1086/209070).

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- Khobzi, H., Lau, R.Y.K. and Cheung, T.C.H. (2019), "The outcome of online social interactions on Facebook pages: a study of user engagement behavior", *Internet Research*, Vol. 29 No. 1, pp. 2-23, doi: [10.1108/IntR-04-2017-0161](https://doi.org/10.1108/IntR-04-2017-0161).
- Kim, T.K. and Choi, M. (2019), "Older adults' willingness to share their personal and health information when adopting healthcare technology and services", *International Journal of Medical Informatics*, Vol. 126, pp. 86-94, doi: [10.1016/j.ijmedinf.2019.03.010](https://doi.org/10.1016/j.ijmedinf.2019.03.010).
- Kim, T. (2014), "Observation on copying and pasting behavior during the Tohoku earthquake: retweet pattern changes", *International Journal of Information Management*, Vol. 34 No. 4, pp. 546-555, doi: [10.1016/j.ijinfomgt.2014.03.001](https://doi.org/10.1016/j.ijinfomgt.2014.03.001).
- Kolekofski, K.E. Jr and Heminger, A.R. (2003), "Beliefs and attitudes affecting intentions to share information in an organizational setting", *Information and Management*, Vol. 40 No. 6, pp. 521-532, doi: [10.1016/S0378-7206\(02\)00068-X](https://doi.org/10.1016/S0378-7206(02)00068-X).
- Larcker, D.F. and Lessig, V.P. (1980), "Perceived usefulness of information: a psychometric examination", *Decision Sciences*, Vol. 11 No. 1, pp. 121-134, doi: [10.1111/j.1540-5915.1980.tb01130.x](https://doi.org/10.1111/j.1540-5915.1980.tb01130.x).
- Li, Y., Wang, X., Lin, X. and Hajli, M. (2018), "Seeking and sharing health information on social media: a net valence model and cross-cultural comparison", *Technological Forecasting and Social Change*, Vol. 126, pp. 28-40, doi: [10.1016/j.techfore.2016.07.021](https://doi.org/10.1016/j.techfore.2016.07.021).
- Lindell, M.K. and Whitney, D.J. (2001), "Accounting for common method variance in cross-sectional research designs", *Journal of Applied Psychology*, Vol. 86 No. 1, pp. 114-121, doi: [10.1037//0021-9010.86.1.114](https://doi.org/10.1037//0021-9010.86.1.114).
- Liu, X., Zhang, B., Susarla, A. and Padman, R. (2020), "Go to YouTube and call me in the morning: use of social media for chronic conditions", *MIS Quarterly*, Vol. 44 No. 1, pp. 257-283, doi: [10.25300/MISQ/2020/15107](https://doi.org/10.25300/MISQ/2020/15107).
- Macedo, I.M. (2017), "Predicting the acceptance and use of information and communication technology by older adults: an empirical examination of the revised UTAUT2", *Computers in Human Behavior*, Vol. 75, pp. 935-948, doi: [10.1016/j.chb.2017.06.013](https://doi.org/10.1016/j.chb.2017.06.013).
- MacKinnon, D.P., Lockwood, C.M., Hoffman, J.M., West, S.G. and Sheets, V. (2002), "A comparison of methods to test mediation and other intervening variable effects", *Psychological Methods*, Vol. 7 No. 1, pp. 83-104, doi: [10.1037/1082-989X.7.1.83](https://doi.org/10.1037/1082-989X.7.1.83).
- Magsamen-Conrad, K., Upadhyaya, S., Joa, C.Y. and Dowd, J. (2015), "Bridging the divide: using UTAUT to predict multigenerational tablet adoption practices", *Computers in Human Behavior*, Vol. 50, pp. 186-196, doi: [10.1016/j.chb.2015.03.032](https://doi.org/10.1016/j.chb.2015.03.032).
- Maiman, L.A. and Becker, M.H. (1974), "The health belief model: origins and correlates in psychological theory", *Health Education Monographs*, Vol. 2 No. 4, pp. 336-353, doi: [10.1177/109019817400200404](https://doi.org/10.1177/109019817400200404).
- Medlock, S., Eslami, S., Askari, M., Arts, D.L., Sent, D., de Rooij, S.E. and Abu-Hanna, A. (2015), "Health information-seeking behavior of seniors who use the internet: a survey", *Journal of Medical Internet Research*, Vol. 17 No. 1, p. e10, doi: [10.2196/jmir.3749](https://doi.org/10.2196/jmir.3749).
- Mikels, J.A., Lockenhoff, C.E., Maglio, S.J., Carstensen, L.L., Goldstein, M.K. and Garber, A. (2010), "Following your heart or your head: focusing on emotions versus information differentially influences the decisions of younger and older adults", *Journal of Experimental Psychology: Applied*, Vol. 16 No. 1, pp. 87-95, doi: [10.1037/a0018500](https://doi.org/10.1037/a0018500).
- Mitzner, T.L., Boron, J.B., Fausset, C.B., Adams, A.E., Charness, N., Czaja, S.J., Dijkstra, K., Fisk, A.D., Rogers, W.A. and Sharit, J. (2010), "Older adults talk technology: technology usage and attitudes", *Computers in Human Behavior*, Vol. 26 No. 6, pp. 1710-1721, doi: [10.1016/j.chb.2010.06.020](https://doi.org/10.1016/j.chb.2010.06.020).
- Mou, J., Shin, D.H. and Cohen, J. (2016), "Health beliefs and the valence framework in health information seeking behaviors", *Information Technology and People*, Vol. 29 No. 4, pp. 876-900, doi: [10.1108/ITP-06-2015-0140](https://doi.org/10.1108/ITP-06-2015-0140).

-
- Ng, B.Y., Kankanhalli, A. and Xu, Y.C. (2009), "Studying users' computer security behavior: a health belief perspective", *Decision Support Systems*, Vol. 46 No. 4, pp. 815-825, doi: [10.1016/j.dss.2008.11.010](https://doi.org/10.1016/j.dss.2008.11.010).
- Nunnally, J. (1978), *Psychometric Theory*, McGraw-Hill Education, New York, NY.
- Park, H., Rodgers, S. and Stemmler, J. (2013), "Analyzing health organizations' use of Twitter for promoting health literacy", *Journal of Health Communication*, Vol. 18 No. 4, pp. 410-425, doi: [10.1080/10810730.2012.727956](https://doi.org/10.1080/10810730.2012.727956).
- Peters, E., Hess, T.M., Västfjäll, D. and Auman, C. (2007), "Adult age differences in dual information processes: implications for the role of affective and deliberative processes in older adults' decision making", *Perspectives on Psychological Science*, Vol. 2 No. 1, pp. 1-23, doi: [10.1111/j.1745-6916.2007.00025.x](https://doi.org/10.1111/j.1745-6916.2007.00025.x).
- Petty, R.E. and Cacioppo, J.T. (1986), "The elaboration likelihood model of persuasion", *Advances in Experimental Social Psychology*, Vol. 19 No. 4, pp. 123-205, doi: [10.1016/S0065-2601\(08\)60214-2](https://doi.org/10.1016/S0065-2601(08)60214-2).
- Podsakoff, P.M. and Organ, D.W. (1986), "Self-reports in organizational research: problems and prospects", *Journal of Management*, Vol. 12 No. 4, pp. 531-544, doi: [10.1177/014920638601200408](https://doi.org/10.1177/014920638601200408).
- Reed, A.E. and Carstensen, L.L. (2012), "The theory behind the age-related positivity effect", *Frontiers in Psychology*, Vol. 3, p. 339, doi: [10.3389/fpsyg.2012.00339](https://doi.org/10.3389/fpsyg.2012.00339).
- Rönkkö, M. and Ylitalo, J. (2011), "PLS marker variable approach to diagnosing and controlling for method variance", *Proceedings of the Thirty Second International Conference on Information Systems*, pp. 1-16, available at: <https://aisel.aisnet.org/icis2011/proceedings/researchmethods/8/>.
- Rosenstock, I.M. (1974), "The health belief model and preventive health behavior", *Health Education Monographs*, Vol. 2 No. 4, pp. 354-386, doi: [10.1177/109019817400200405](https://doi.org/10.1177/109019817400200405).
- Shamaskin, A.M., Mikels, J.A. and Reed, A.E. (2010), "Getting the message across: age differences in the positive and negative framing of health care messages", *Psychology & Aging*, Vol. 25 No. 3, pp. 746-751, doi: [10.1037/a0018431](https://doi.org/10.1037/a0018431).
- Sheng, X. and Simpson, P.M. (2013), "Seniors, health information, and the Internet: motivation, ability, and Internet knowledge", *Cyberpsychology, Behavior, and Social Networking*, Vol. 16 No. 10, pp. 740-746, doi: [10.1089/cyber.2012.0642](https://doi.org/10.1089/cyber.2012.0642).
- Shi, J., Hu, P., Lai, K.K. and Chen, G. (2018), "Determinants of users' information dissemination behavior on social networking sites: an elaboration likelihood model perspective", *Internet Research*, Vol. 28 No. 2, pp. 393-418, doi: [10.1108/IntR-01-2017-0038](https://doi.org/10.1108/IntR-01-2017-0038).
- Silver, M.P. (2015), "Patient perspectives on online health information and communication with doctors: a qualitative study of patients 50 years old and over", *Journal of Medical Internet Research*, Vol. 17 No. 1, p. e19, doi: [10.2196/jmir.3588](https://doi.org/10.2196/jmir.3588).
- Sinclair, T.J. and Grieve, R. (2017), "Facebook as a source of social connectedness in older adults", *Computers in Human Behavior*, Vol. 66, pp. 363-369, doi: [10.1016/j.chb.2016.10.003](https://doi.org/10.1016/j.chb.2016.10.003).
- Stieglitz, S. and Dang-Xuan, L. (2013), "Emotions and information diffusion in social media—sentiment of microblogs and sharing behavior", *Journal of Management Information Systems*, Vol. 29 No. 4, pp. 217-248, doi: [10.2753/MIS0742-1222290408](https://doi.org/10.2753/MIS0742-1222290408).
- Straub, D., Boudreau, M.C. and Gefen, D. (2004), "Validation guidelines for IS positivist research", *Communications of the Association for Information Systems*, Vol. 13 No. 1, pp. 380-427, doi: [10.17705/1CAIS.01324](https://doi.org/10.17705/1CAIS.01324).
- Sussman, S.W. and Siegal, W.S. (2003), "Informational influence in organizations: an integrated approach to knowledge adoption", *Information Systems Research*, Vol. 14 No. 1, pp. 47-65, doi: [10.1287/isre.14.1.47.14767](https://doi.org/10.1287/isre.14.1.47.14767).
- Tencent and CASS (2018), "Internet life of older adults", available at: <http://www.199it.com/archives/701688.html> (accessed 10 May 2018).

-
- Terra, J.C. and Angeloni, T. (2003), "Understanding the difference between information management and knowledge management", *Proceedings of the International Association for Management of Technology Conference*, pp. 1-9, available at: http://www.providersedge.com/docs/km_articles/Understanding_the_Difference_Between_IM_and_KM.pdf.
- United Nations (2019), "World population ageing 2019", available at: <https://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2019-Report.pdf> (accessed 10 April 2020).
- Wilson, D.K., Purdon, S.E. and Wallston, K.A. (1998), *Health Education Research*, Vol. 3 No. 2, pp. 161-171.
- Wu, T., Deng, Z., Zhang, D., Buchanan, P.R., Zha, D. and Wang, R. (2018), "Seeking and using intention of health information from doctors in social media: the effect of doctor-consumer interaction", *International Journal of Medical Informatics*, Vol. 115, pp. 106-113, doi: [10.1016/j.ijmedinf.2018.04.009](https://doi.org/10.1016/j.ijmedinf.2018.04.009).
- Yan, Z., Wang, T., Chen, Y. and Zhang, H. (2016), "Knowledge sharing in online health communities: a social exchange theory perspective", *Information and Management*, Vol. 53 No. 5, pp. 643-653, doi: [10.1016/j.im.2016.02.001](https://doi.org/10.1016/j.im.2016.02.001).
- Yan, Y., Zhang, X., Zha, X., Jiang, T., Qin, L. and Li, Z. (2017), "Decision quality and satisfaction: the effects of online information sources and self-efficacy", *Internet Research*, Vol. 27 No. 4, pp. 885-904, doi: [10.1108/IntR-04-2016-0089](https://doi.org/10.1108/IntR-04-2016-0089).
- Yi, M.Y., Yoon, J.J., Davis, J.M. and Lee, T. (2013), "Untangling the antecedents of initial trust in Web-based health information: the roles of argument quality, source expertise, and user perceptions of information quality and risk", *Decision Support Systems*, Vol. 55 No. 1, pp. 284-295, doi: [10.1016/j.dss.2013.01.029](https://doi.org/10.1016/j.dss.2013.01.029).
- Zha, X., Yang, H., Yan, Y., Liu, K. and Huang, C. (2018), "Exploring the effect of social media information quality, source credibility and reputation on informational fit-to-task: moderating role of focused immersion", *Computers in Human Behavior*, Vol. 79, pp. 227-237, doi: [10.1016/j.chb.2017.10.038](https://doi.org/10.1016/j.chb.2017.10.038).
- Zhang, Y., Dang, Y. and Chen, H. (2013), "Research note: examining gender emotional differences in web forum communication", *Decision Support Systems*, Vol. 55 No. 3, pp. 851-860, doi: [10.1016/j.dss.2013.04.003](https://doi.org/10.1016/j.dss.2013.04.003).
- Zhang, X., Liu, S., Deng, Z. and Chen, X. (2017), "Knowledge sharing motivations in online health communities: a comparative study of health professionals and normal users", *Computers in Human Behavior*, Vol. 75, pp. 797-810, doi: [10.1016/j.chb.2017.06.028](https://doi.org/10.1016/j.chb.2017.06.028).
- Zhang, X., Liu, S., Chen, X., Wang, L., Gao, B. and Zhu, Q. (2018), "Health information privacy concerns, antecedents, and information disclosure intention in online health communities", *Information and Management*, Vol. 55 No. 4, pp. 482-493, doi: [10.1016/j.im.2017.11.003](https://doi.org/10.1016/j.im.2017.11.003).
- Zhou, T. (2017), "Understanding location-based services users' privacy concern: an elaboration likelihood model perspective", *Internet Research*, Vol. 27 No. 3, pp. 506-519, available at: <http://doi.org/10.1108/IntR-04-2016-0088>.

Appendix

Health
information on
social media

Constructs	Items	Source
Health information-sharing intention	HISI1: I plan to share health information on WeChat that is helpful to other people HISI2: I will try to share the health information on WeChat that I am interested in HISI3: I will share the health information on WeChat that others may need HISI4: I will try to share health information on WeChat	Ha and Ahn (2011), Zhang <i>et al.</i> (2017)
Perceived usefulness	PU1: Health information on WeChat is useful PU2: Health information on WeChat is valuable PU3: Health information on WeChat is helpful	Sussman and Siegal (2003), Ha and Ahn (2011)
Perceived severity	PSE1: The consequences of the health-related issues mentioned in health information on WeChat may be serious for my WeChat friends PSE2: Contracting the health-related issues mentioned in health information on WeChat would be likely to cause my WeChat friends major problems PSE3: Suffering from the health-related issues mentioned in health information on WeChat is a serious problem for my WeChat friends	Ng <i>et al.</i> (2009), Rosenstock (1974)
Perceived susceptibility	PSU1: The health-related issues mentioned in health information on WeChat are likely to happen to my WeChat friends PSU2: There is a good possibility that my WeChat friends will experience the health-related issues mentioned in health information on WeChat PSU3: My WeChat friends are likely to contract the health-related issues mentioned in health information on WeChat	Ng <i>et al.</i> (2009), Rosenstock (1974)
Argument quality	AQ1: Health information on WeChat is accurate AQ2: Health information on WeChat is definite AQ3: Health information on WeChat is complete	Jarvenpaa and Staples (2000), Sussman and Siegal (2003)
Source credibility	SC1: Operators of health-related registered accounts of WeChat are trustworthy SC2: Producers of the health-related articles published by health-related registered accounts of WeChat are reliable SC3: Producers of the health-related articles published by health-related registered accounts of WeChat are trustworthy	Sussman and Siegal (2003), Ha and Ahn (2011)

Table A1.
Scale items

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